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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/783,958

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Robert S. Whitehouse

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EXAMINER

HAIDER, SAIRA BANO

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

04/28/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/783,958	WHITEHOUSE, ROBERT S.	
	<b>Examiner</b>	<b>Art Unit</b>	
	SAIRA HAIDER	1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2/6/2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-80 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-16, 20-36, 40-46, 48-55, 57-71, 74-80 are rejected under 35 U.S.C. 102(b) as being anticipated by Hammond (US 5,646,217).

3. Hammond discloses a polymer composition comprising a first polyhydroxyalkanoate (PHA) component and optionally a second polymer component (abstract). Wherein the first PHA component is poly-3-hydroxybutyrate (PHB) with a weight average molecular weight over 5,000, especially over 100,000. Hammond discloses that particular polyesters contain a preponderance of  $m=3$  units (i.e. 3-hydroxybutyrate monomers), especially with 70-95 mol% of such units, wherein the balance being units in which  $m=4$  (4-hydroxybutyrate monomers) (col. 1, lines 35-55). Where the first polyester and second polymer components can be present in the composition in any suitable amount to provide the desired composition. Hammond discloses that typically each component will be present in amounts from 5-90 preferably 20-80% w/w (col. 3, lines 6-10). Additionally, attention is directed to the examples, wherein Hammond exemplifies a 3-hydroxybutyrate monomer content of greater than 65 wt% (Examples 1-3). Hammond discloses that the polymer composition can be used as an adhesive with the inclusion of suitable additives (col. 5, lines 17-18). Thus Hammond envisages the formation of an adhesive composition.

4. Hammond discloses that the first polyester component, PHB, is capable of a relatively high level of crystallinity, for example over 30% in the absence of plasticizer (col. 1, lines 32-34).

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Hammond exemplifies a PHB with a glass transition temperature of -5.3°C (Table 4). Hammond exemplifies PHB with a polydispersity of 3.35 (Table 5).

5. In reference to the claimed limitations regarding an article comprising a substrate and the claimed PHA containing composition, Hammond discloses that the composition can be used to form articles via coat melting onto substrate. In reference to claim 71, the composition can be used to form articles via compression molding, wherein compression molding involves pressing the composition in between two substrates (col. 5, lines 5-10).

6. Additives, including those claimed are used in amounts as little as 2 phr w/w (col. 4, lines 17-25). The composition is formed by mixing PHA and an organic solvent, since the composition is formed into an article, it is inherent that the solvent is evaporated (col. 4, lines 5-9; col. 5, lines 5-10). Thus the reference suggests the claimed composition having less than 1% by weight of solvent.

7. In reference to the claimed properties (surface tack time, peel bond strength, and open time), since the materials used in the invention of Hammond are the same are those found suitable by the applicant for the invention, and because the polymers and compositions have the claimed molecular weight, glass transition temperature, crystallinity, and polydispersity as claimed by applicant, it is the examiner's position that the polymers and compositions would inherently possess the claimed surface tack time, peel bond strength, and open time.

8. In reference to the newly added terminology "consisting essentially of," as per MPEP § 2111.03, the transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). However, for the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics

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actually are, "consisting essentially of" will be construed as equivalent to "comprising." See, e.g., *PPG*, 156 F.3d at 1355, 48 USPQ2d at 1355. If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention. *In re De Lajarte*, 337 F.2d 870, 143 USPQ 256 (CCPA 1964).

9. Neither applicant's specification nor the claims specify the basic and novel characteristics, hence the transitional phrase "consisting essentially of" is construed as equivalent to "comprising."

***Claim Rejections - 35 USC § 103***

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 37-39, 47, 56, 72, and 73 rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond (US 5,646,217).

12. Hammond applies as above, but fails to disclose the difference in the molecular weight of the first and second PHA compound. However, Hammond teaches this limitation. Hammond discloses that the second polymer component may be a PHA composition of a different chemical composition (than the first PHA composition), wherein the crystalline melting point of the second PHA is higher by at least 50°C than that of the first polyester component (col. 2, lines 19-47). Given the intimate relationship of molecular weight and the melting point of the composition, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize first and second PHA compositions with a weight average molecular weight difference of at least 1,000 in order to ensure that the crystalline melting point of the second PHA is higher by at least 50°C than that of the first polyester component.

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13. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond (US 5,646,217) in view of Procter & Gamble (previously cited).

14. Hammond applies as above, teaching organic solvents but failing to teach aqueous solvents or aqueous mixtures. Procter & Gamble teaches PHA adhesives for non-woven substrates, where mixtures of organic solvents, including chloroform, and water are used to form dispersions (abstract; p. 16, line 1-p. 17 line 6). Because water is included, the adhesives are more environmentally friendly. Therefore, it is the examiner's position that it would have been prima facie obvious to use mixtures of immiscible organic solvents and water in the adhesives of the Hammond invention to form environmentally-friendly adhesive dispersions.

### ***Double Patenting***

15. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer.

A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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16. Claims 1-80 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-67 of U.S. Patent No. 6,780,911 in view of Hammond (US 5,646,217). The '911 patent claims a composition comprising poly 3-hydroxybutyrate-co-4-hydroxybutyrate, wherein claims 1 and the dependent claims thereof fail to claim the amount of 3-hydroxybutyrate monomers present in the composition, as claimed herein. However, the enabling specification makes known this limitation (col. 11, lines 26-30). Additionally, the '911 patent claims a composition comprising 60-99 wt% of 3-hydroxybutyric acid (claim 24 and the dependent claims thereof). In reference to the herein claimed properties (surface tack time, peel bond strength, and open time), the enabling disclosure of the '911 patent discloses that suitable PHA compositions with the claimed molecular weight, glass transition temperature, and crystallinity as claimed by applicant, thus, it is the examiner's position that the polymers and compositions would inherently possess the claimed surface tack time, peel bond strength, and open time (col. 9, lines 50-55).

17. Further, the '911 patent fails to disclose that the claimed composition is suitable as an adhesive. However, the Hammond reference, as discussed above, recognizes that compositions includes PHB are suitable for use as adhesives via the inclusion of suitable additives (col. 5, lines 17-18). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the composition claimed in the '911 patent as an adhesive composition given the teachings of the Hammond reference.

18. Claims 1-80 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-54 of U.S. Patent No. 7,094,840. Although the conflicting claims are not identical, they are not patentably distinct from each other because the '840 patent claims a hot melt adhesive comprising a PHA composition, such as 3-hydroxybutyric acid. The '940 patent fails to claim the amount of 3-hydroxybutyric acid present in the composition, as claimed,

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however, the enabling disclosure makes know this limitation (col. 6, lines 26-42). In reference to the herein claimed properties (surface tack time, peel bond strength, and open time), the enabling disclosure of the '840 patent discloses that suitable PHA compositions with the claimed molecular weight, glass transition temperature, and crystallinity as claimed by applicant, thus, it is the examiner's position that the polymers and compositions would inherently possess the claimed surface tack time, peel bond strength, and open time (col. 13, lines 4-10). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the herein claimed composition.

19. Claims 1-80 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-82 of copending Application No. 10/783,995 (US 2004/0220355 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because the '995 application claims a blend comprising as most about 99 wt % of 3-hydroxybutyrate. The '995 application fails to claim that the blend is capable of functioning as an adhesive, as claimed herein, however, the enabling disclosure makes known this limitation [0098]. In reference to the herein claimed properties (surface tack time, peel bond strength, and open time), the enabling disclosure of the '995 application discloses that suitable PHA compositions with the claimed molecular weight, glass transition temperature, crystallinity, and polydispersity as claimed by applicant, thus, it is the examiner's position that the polymers and compositions would inherently possess the claimed surface tack time, peel bond strength, and open time (claim 36, [0120-0125]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the herein claimed composition.



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20. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

21. Claims 1-80 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-55 of copending Application No. 09/999,768 (US 2002/0077269 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because the '768 application claims a composition comprising 3-hydroxybutyrate. The '768 application fails to claim that the composition is capable of functioning as an adhesive, as claimed herein, however, the enabling disclosure makes known this limitation [0114]. The '768 application fails to claim the amount of 3-hydroxybutyrate present in the composition, as claimed herein, however, the enabling disclosure makes known this limitation [0081]. In reference to the herein claimed properties (surface tack time, peel bond strength, and open time), the enabling disclosure of the '768 application discloses that suitable PHA compositions with the claimed molecular weight, and glass transition temperature as claimed by applicant, thus, it is the examiner's position that the polymers and compositions would inherently possess the claimed surface tack time, peel bond strength, and open time [0090, 0101]. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the herein claimed composition.

22. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

23. Claims 1-80 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 43-90 of copending Application No. 11/479,360 (US 2006/0247390 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because the '360 application claims an adhesive composition comprising 3-hydroxybutyrate. The '360 application fails to claim the amount of 3-hydroxybutyrate present in the

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composition, as claimed herein, however, the enabling disclosure makes known this limitation [0094]. In reference to the herein claimed properties (surface tack time, peel bond strength, and open time), the enabling disclosure of the '360 application discloses that suitable PHA compositions with the claimed molecular weight, glass transition temperature, and crystallinity as claimed by applicant, thus, it is the examiner's position that the polymers and compositions would inherently possess the claimed surface tack time, peel bond strength, and open time [0091]. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the herein claimed composition.

24. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### ***Response to Arguments***

25. As noted above, since neither applicant's specification nor the claims specify the basic and novel characteristics, the transitional phrase "consisting essentially of" is construed as equivalent to "comprising."

26. Applicant has alleged that the transesterification catalyst of Hammond would materially affect the basic and novel characteristics of the composition; however applicant has failed to substantiate their allegations with showings. As per MPEP § 2111.03, if an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention. *In re De Lajarte*, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). Additionally, applicants' specification, page 4 and page 12 suggest the addition of well-known crosslinking agents and catalysts. Therefore, one skilled in the art would not

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expect such catalysts of Hammond to effect the basic and novel characteristics of the claimed invention. Accordingly, the rejections have been maintained.

### ***Conclusion***

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAIRA HAIDER whose telephone number is (571)272-3553. The examiner can normally be reached on Monday-Friday from 10am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Randy Gulakowski/  
Supervisory Patent Examiner, Art Unit 1796

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